

WHAT IS CLAIMED IS:

1           1.       In an Ethernet protocol network having a plurality of platforms, each  
2       serving a plurality of customers, a method of routing at least one information frame from  
3       at least one sending customer site served by a first platform to at least one receiving  
4       customer site served by a second platform, comprising the steps of:

5           (a) receiving at said first platform said one frame from said one sending customer;

6           (b) overwriting said one frame with a customer descriptor that identifies said  
7       sending customer;

8           (c) routing the frame on the network to said second platform; and

9           (d) delivering the frame to the receiving customer site by mapping the customer  
10       descriptor to the receiving customer.

1           2.       The method according to claim 1 wherein the mapping step includes the  
2       step of mapping the customer descriptor to a customer Virtual Private Networks (VPN)  
3       associated with the receiving customer.

1           3.       The method according to claim 1 further including the steps of:  
2       providing the customer descriptor with a quality of service indicator that specifies  
3       the quality of service level afforded to the accepted frame; and  
4       transmitting the frame to the receiving customer with the quality of service level  
5       specified by the quality of service indicator provided within the customer descriptor.

1           4.       The method according to claim 1 wherein the mapping step includes the  
2       step of mapping the customer descriptor to a corresponding one of a plurality of Frame  
3       Relay and ATM Permanent Virtual Circuits associated with the receiving customer.

1           5.       The method according to claim 1 wherein the mapping step includes the  
2       step of mapping the customer descriptor to one a plurality of Multi-Protocol Label  
3       Switching tunnels associated with the receiving customer.

1           6.       The method according to claim 1 wherein the mapping step includes the  
2 step of mapping the customer descriptor to one of a plurality of different service networks  
3 associated with the receiving customer.

1           7.       The method according to claim 1 wherein the step of overwriting the  
2 frame includes the step of overwriting a Virtual LAN Identifier (VLAN) field within the  
3 frame.

1           8.       The method according to claim 1 wherein the step overwriting the frame  
2 includes the step of overwriting a source address field within the information frame.

1           9.       The method according to claim 1 wherein the step overwriting the frame  
2 includes the step inserting a shim header containing the customer descriptor.

1           10.      In an Ethernet protocol network having a plurality of platforms, each  
2 serving a plurality of customers, a method of routing at least one information frame from  
3 at least one sending customer served by a first platform to at least one receiving customer  
4 served by a second platform, comprising the steps of:

5           (a) receiving at said first platform said one frame from said one sending customer,  
6 said one frame containing a Virtual LAN identifier (VLAN) field;

7           (b) overwriting VLAN field in said one frame with a customer descriptor that  
8 identifies said sending customer (c) routing the frame on the network to said second  
9 platform; and

10          (d) delivering the frame to the receiving customer by mapping the customer  
11 descriptor to the receiving customer.

1           11.      The method according to claim 10 wherein the mapping step includes the  
2 step of mapping the customer descriptor to a customer Virtual Private Networks (VPN)  
3 associated with the receiving customer.

1           12.      The method according to claim 10 further including the steps of:

2 providing the customer descriptor with a quality of service indicator that specifies  
3 the quality of service level afforded to the accepted frame; and  
4 transmitting the frame to the receiving customer with the quality of service level  
5 specified by the quality of service indicator provided within the customer descriptor.

1 13. The method according to claim 10 wherein the mapping step includes the  
2 step of mapping the customer descriptor to a corresponding one of a plurality of Frame  
3 Relay and ATM Permanent Virtual Circuits associated with the receiving customer.

1 14. The method according to claim 10 wherein the mapping step includes the  
2 step of mapping the customer descriptor to one of a plurality of Multi-Protocol Label  
3 Switching tunnels associated with the receiving customer.

1 15. The method according to claim 10 wherein the mapping step includes the  
2 step of mapping the customer descriptor to one of a plurality of different service networks  
3 in associated with the receiving customer.

1 16. An Ethernet protocol network comprising:  
2 a fiber ring infrastructure; and  
3 a plurality of platforms coupled to the fiber ring infrastructure, each platform  
4 serving at least one customer for statistically multiplexing information frames onto the  
5 fiber ring infrastructure from said one customer and for statistically de-multiplexing  
6 information frames off the fiber ring infrastructure to the one customer  
7 wherein each platform sending a frame overwrites said frame with a customer  
8 descriptor that identifies the sending customer; and routes the frame on the network to a  
9 receiving site; and  
10 wherein each platform delivering a frame to the receiving customer does so by  
11 mapping the customer descriptor to the receiving customer.

1           17.     The apparatus according to claim 16 wherein the receiving platform maps  
2     the customer descriptor through a provider edge router to a customer Virtual Private  
3     Networks (VPN) associated with the receiving customer.

1           18.     The apparatus according to claim 16 wherein the customer descriptor  
2     includes quality of service level information.

1           19.     The apparatus according to claim 16 wherein the receiving platform maps  
2     the customer descriptor through an ATM switch router to a corresponding one of a  
3     plurality of Frame Relay and ATM Permanent Virtual Circuits associated with the  
4     receiving customer.

1           20.     The apparatus according to claim 16 wherein the receiving platform maps  
2     the customer descriptor through a provider edge router to one a plurality of Multi-  
3     Protocol Label Switching tunnels associated with the receiving customer.

1           21.     The apparatus according to claim 16 wherein the receiving platform maps  
2     the customer descriptor through a provider edge router to one of a plurality of different  
3     service networks in associated with the receiving customer.

1           22.     The apparatus according to claim 16 wherein the sending platform  
2     overwrites a Virtual LAN Identifier (VLAN) field within the frame with the customer  
3     descriptor.

1           23.     The apparatus according to claim 16 wherein the sending platform  
2     overwrites a source address field within the information frame with the customer  
3     descriptor.

1           24.     The method according to claim 16 wherein the sending platform inserts  
2     into the frame a shim header containing the customer descriptor.